

TRANSACTIONS

OF THE

American Society of Civil Engineers

INDEX

VOLUMES LXVIII AND LXIX

OCTOBER, 1910

SUBJECT INDEX, PAGE 444

AUTHOR INDEX, PAGE 450

**Titles of papers are in quotation marks when given with the
author's name.**

VOLUMES LXVIII AND LXIX

SUBJECT INDEX

AIR COMPRESSORS.

See COMPRESSORS.

BRIDGES.

Highway and railroad — crossing Sunnyside Yard, Pennsylvania Railroad Terminal, New York. LXIX, 138.

Lift rail and rail-locking device, Hackensack Draw-Bridge, Pennsylvania Railroad. LXVIII, 81.

Viaducts crossing terminal yard, Pennsylvania Railroad, New York. LXVIII, 305; LXIX, 155.

BUILDINGS.

"The New York Tunnel Extension of the Pennsylvania Railroad. Certain Engineering Structures of the New York Terminal Area." George B. Francis and Joseph H. O'Brien. LXIX, 152.

"The New York Tunnel Extension of the Pennsylvania Railroad. Station Construction, Road, Track, Yard Equipment, Electric Traction, and Locomotives." George Gibbs. LXIX, 226, 434.

CAISSENS.

—, East River Tunnels, Pennsylvania Railroad. LXVIII, 426, 430.

— used in construction of shafts for Pennsylvania Railroad Tunnels, New York. LXIX, 63.

Sinking — for East River Tunnels. LXIX, 391.

COAL-HANDLING MACHINERY.

— used in contractors' plant, Pennsylvania Railroad Tunnels, New York. LXIX, 20.

COMPRESSORS.

Air — for operating switches, signals, etc., Pennsylvania Railroad Terminal, New York. LXIX, 290.

Data relating to air — used in construction of Pennsylvania Railroad Tunnels, New York. LXIX, 30.

CONCRETE.

Reinforced — poles for telegraph and telephone lines, Pennsylvania Railroad Terminal improvements, New York. LXIX, 351.

CONDUITS.

—, Bergen Hill Tunnels, Pennsylvania Railroad. LXVIII, 128.

—, Cross-Town Tunnels, Pennsylvania Railroad. LXVIII, 416.

- for electric wires, terminal station, Pennsylvania Railroad, New York. LXIX, 184, 209, 350.
- , North River Tunnels, Pennsylvania Railroad. LXVIII, 203.
- Electric —, East River Tunnels, Pennsylvania Railroad. LXVIII, 477.

CONTRACTORS' PLANT.

- at Bergen Hill Tunnels, Pennsylvania Railroad. LXVIII, 106.
- , Cross-Town Tunnels, Pennsylvania Railroad. LXVIII, 392.
- , Long Island City approaches, Pennsylvania Railroad Tunnels, New York. LXIX, 122.
- “ — for East River Tunnels.” Henry Japp. LXIX, 1, 393.
- , North River Tunnels, Pennsylvania Railroad. LXVIII, 156.
- , Terminal Station site, Pennsylvania Railroad, New York. LXVIII, 361.

DRAINAGE.

- of tunnels, approaches, and yards, Pennsylvania Railroad Terminal, New York. LXIX, 117, 129, 147, 180, 323.

DRILLING.

- North River Tunnels, Pennsylvania Railroad. LXVIII, 180.
- Methods and results of — Bergen Hill Tunnels, the New York Tunnel Extension of the Pennsylvania Railroad. LXVIII, 87.

ELECTRIC LIGHTING.

- of the station, tunnels, and yards, Pennsylvania Railroad Terminal, New York. LXIX, 269, 292, 299, 328.

ELECTRIC LOCOMOTIVES.

- in use at Pennsylvania Railroad Terminal, New York. LXIX, 358, 421, 422, 426, 432.

ELECTRIC MACHINERY.

- used in contractors' plant, Pennsylvania Railroad Tunnels, New York. LXIX, 37.

ELECTRIC POWER.

- “ The New York Tunnel Extension of the Pennsylvania Railroad. Station Construction, Road, Track, Yard Equipment, Electric Traction, and Locomotives.” George Gibbs. LXIX, 226, 434.

ELECTRIC RAILWAYS.

- “ The New York Tunnel Extension of the Pennsylvania Railroad. Station Construction, Road, Track, Yard Equipment, Electric Traction, and Locomotives.” George Gibbs. LXIX, 226, 434.

ELEVATORS.

- and lifts, Pennsylvania Railroad Station, New York. LXIX, 261.

EXCAVATION.

- “ The New York Tunnel Extension of the Pennsylvania Railroad. The Site of the Terminal Station.” George C. Clarke. LXVIII, 340.
- “ The New York Tunnel Extension of the Pennsylvania Railroad. The Terminal Station-West.” B. F. Cresson, Jr. LXVIII, 303.

FIRE PROTECTION.

- for contractors' plant, Pennsylvania Railroad Tunnels, New York. LXIX, 35.
- for yards and power station, Pennsylvania Railroad Terminal, New York. LXIX, 326, 334.

FREEZING PROCESS.

- Experiments with —, Pennsylvania Railroad Tunnels, New York. LXVIII, 24.

HEATING.

- and ventilation of the Pennsylvania Railroad Station, New York. LXIX, 270.

OIL SEPARATORS.

- , contractors' plant, East River Tunnels, Pennsylvania Railroad. LXIX, 22.

PILES.

- Screw-piles proposed for support of North River Tunnels. LXVIII, 26
42, 46, 216.

POWER PLANTS.

- , Pennsylvania Railroad Terminal, New York. LXIX, 284, 333.

PUMPS.

- for hydraulic pressure, contractors' plant, Pennsylvania Railroad Tunnels, New York. LXIX, 32.

RAILROAD PLATFORMS.

- at Harrison Transfer Yard, Pennsylvania Railroad Terminal. LXVIII,
76.
- , Pennsylvania Terminal Station, New York. LXIX, 201, 259.

RAILROAD STATIONS.

- Location and design of terminal —. LXIX, 401, 417, 423, 428, 435.

"The New York Tunnel Extension of the Pennsylvania Railroad. Certain Engineering Structures of the New York Terminal Area." George B. Francis and Joseph H. O'Brien. LXIX, 153.

"The New York Tunnel Extension of the Pennsylvania Railroad. Station Construction, Road, Track, Yard Equipment, Electric Traction, and Locomotives." George Gibbs. LXIX, 226, 434.

RAILROAD TERMINALS.

"The New York Tunnel Extension of the Pennsylvania Railroad." Charles W. Raymond. LXVIII, 1.

"The New York Tunnel Extension of the Pennsylvania Railroad. Certain Engineering Structures of the New York Terminal Area." George B. Francis and Joseph H. O'Brien. LXIX, 152.

"The New York Tunnel Extension of the Pennsylvania Railroad. Contractors' Plant for East River Tunnels." Henry Japp. LXIX,
1, 393.

The New York Tunnel Extension of the Pennsylvania Railroad. Discussion on the Sixteen Papers Descriptive of This Work. Edward Wegmann, Charles E. Fraser, Henry Japp, A. Bartoccini, C. L. Harrison, J. V. Davies, William J. Wilgus, Charles S. Churchill, G. R. Henderson, Edwin B. Katte, George A. Harwood, N. W. Storer, J. H. Gandolfo, E. R. Hill, and George Gibbs. LXIX, 388.

"The New York Tunnel Extension of the Pennsylvania Railroad. Meadows Division and Harrison Transfer Yard." E. B. Temple. LXVIII, 75.

"The New York Tunnel Extension of the Pennsylvania Railroad. Station Construction, Road, Track, Yard Equipment, Electric Traction, and Locomotives." George Gibbs. LXIX, 226, 434.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Bergen Hill Tunnels." F. Lavis. LXVIII, 84.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Cross-Town Tunnels." James H. Brace and Francis Mason. LXVIII, 391.

"The New York Tunnel Extension of the Pennsylvania Railroad. The East River Division." Alfred Noble. LXVIII, 62.

"The New York Tunnel Extension of the Pennsylvania Railroad. The East River Tunnels." James H. Brace, Francis Mason, and S. H. Woodard. LXVIII, 419.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Lining of the Four Permanent Shafts of the East River Division." F. M. Green. LXIX, 78.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Long Island Approaches to the East River Tunnels." George C. Clarke. LXIX, 91.

"The New York Tunnel Extension of the Pennsylvania Railroad. The North River Division." Charles M. Jacobs. LXVIII, 32.

"The New York Tunnel Extension of the Pennsylvania Railroad. The North River Tunnels." B. H. M. Hewett and W. L. Brown. LXVIII, 152.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Site of the Terminal Station." George C. Clarke. LXVIII, 340.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Sunnyside Yard." Louis H. Barker. LXIX, 132.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Terminal Station-West." B. F. Cresson, Jr. LXVIII, 303.

RAILROAD YARDS.

"The New York Tunnel Extension of the Pennsylvania Railroad. Meadows Division and Harrison Transfer Yard." E. B. Temple. LXVIII, 75.

"The New York Tunnel Extension of the Pennsylvania Railroad. Station Construction, Road, Track, Yard Equipment, Electric Traction, and Locomotives." George Gibbs. LXIX, 226, 434.
"The New York Tunnel Extension of the Pennsylvania Railroad. The Sunnyside Yard." Louis H. Barker. LXIX, 132.

REFRIGERATOR SYSTEMS.

Refrigerating plant, Pennsylvania Railroad Terminal, New York. LXIX, 290.

RETAINING WALLS.

— at Terminal Station, New York Tunnel Extension of the Pennsylvania Railroad. LXVIII, 328, 347, 369.

SCREW-PILES.

See PILES.

SHAFTS.

— for East River Tunnels, Pennsylvania Railroad. LXVIII, 67.

— for North River Tunnels. LXVIII, 153.

Shaft sinking, Cross-Town Tunnels, Pennsylvania Railroad. LXVIII, 398.

"The New York Tunnel Extension of the Pennsylvania Railroad. The East River Tunnels." James H. Brace, Francis Mason, and S. H. Woodard. LXVIII, 419.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Lining of the Four Permanent — of the East River Division." F. M. Green. LXIX, 78.

SIGNALING.

Comparison of methods of — in the Pennsylvania and Hudson and Manhattan Railroad tunnels. LXIX, 409.

— system in use at Pennsylvania Railroad Terminal, New York. LXIX, 266, 368.

STEEL.

Specifications for — street bridging and station building, Pennsylvania Railroad Terminal, New York. LXIX, 214, 220.

SUBWAYS.

— for pipes, wiring, and baggage transfer, Pennsylvania Railroad Terminal, New York. LXIX, 175, 237.

TRACK.

Cost of —. LXIX, 409, 424.

Comparison of — in the Pennsylvania and Hudson and Manhattan Railroad tunnels. LXIX, 409.

— used in the tunnels and station of the New York terminus of the Pennsylvania Railroad. LXIX, 305, 345.

TUNNEL SHIELDS.

- for North River Tunnels. LXVIII, 52, 167, 237.
- used in construction of East River Tunnels, Pennsylvania Railroad. LXVIII, 420.
- used in construction of Pennsylvania Railroad Tunnels, New York. LXIX, 39.

TUNNELS.

- Masonry lining, Pennsylvania Railroad Tunnels, New York. LXVIII, 192, 413, 417.
- Method of tunneling on part of New Croton Aqueduct. LXIX, 388.
- Tunnel lining, Bergen Hill Tunnels, Pennsylvania Railroad. LXVIII, 114.
- Tunnel lining, East River Tunnels, Pennsylvania Railroad. LXVIII, 459.
- Tunnel lining, North River Tunnels, Pennsylvania Railroad. LXVIII, 209, 254.
- Tunneling in compressed air without a shield. LXVIII, 424.

UNDERPINNING.

- buildings near tunnel caissons. LXIX, 391.
- Ninth Avenue during work on Pennsylvania Railroad Terminal. LXVIII, 305.

VENTILATION.

- Description of the ventilating apparatus used in the tunnels of the New York terminus of the Pennsylvania Railroad. LXIX, 299.
- Heating and — of the Pennsylvania Railroad Station, New York. LXIX, 274.
- Tests of — in Hudson and Manhattan Railroad tunnels. LXIX, 414.
- , Bergen Hill Tunnels, Pennsylvania Railroad. LXVIII, 100.
- in East River Tunnels, Pennsylvania Railroad. LXIX, 420.

VIADUCTS.

- crossing terminal yard, Pennsylvania Railroad, New York. LXVIII, 305; LXIX, 155.

WATER-PROOFING.

- Specifications for —, Pennsylvania Railroad Terminal, New York. LXIX, 211.
- Cross-Town Tunnels, Pennsylvania Railroad. LXVIII, 416.
- Long Island approaches, East River Tunnels, Pennsylvania Railroad. LXIX, 107, 114.
- of the Bergen Hill Tunnels, the New York Tunnel Extension of the Pennsylvania Railroad. LXVIII, 140.
- of the North River Tunnels of the New York Tunnel Extension of the Pennsylvania Railroad. LXVIII, 197.
- permanent shafts, East River Tunnels, Pennsylvania Railroad. LXIX, 80.
- viaduct masonry, terminal structures, Pennsylvania Railroad, New York. LXIX, 158.

AUTHOR INDEX.

BARKER, LOUIS H.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Sunnyside Yard." LXIX, 132.

BARTOCCINI, A.

Design of tunnel approaches. LXIX, 396.

BRACE, JAMES H.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Cross-Town Tunnels." LXVIII, 391.

"The New York Tunnel Extension of the Pennsylvania Railroad. The East River Tunnels." LXVIII, 419.

BROWN, W. L.

"The New York Tunnel Extension of the Pennsylvania Railroad. The North River Tunnels." LXVIII, 152.

CHURCHILL, CHARLES S.

Ventilation in the East River Tunnels. LXIX, 420.

CLARKE, GEORGE C.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Long Island Approaches to the East River Tunnels." LXIX, 91.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Site of the Terminal Station." LXVIII, 340.

CRESSON, B. F., Jr.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Terminal Station-West." LXVIII, 303.

DAVIES, J. V.

Location and design of terminal railroad stations, and comparison of track, signals, and ventilation in the tunnels of the Pennsylvania and Hudson and Manhattan Railroads; together with ventilation tests in the latter. LXIX, 401.

FRANCIS, GEORGE B.

"The New York Tunnel Extension of the Pennsylvania Railroad. Certain Engineering Structures of the New York Terminal Area." LXIX, p. 152.

FRASER, CHARLES E.

Sinking caissons, underpinning buildings near tunnel caissons, and tunneling under East River. LXIX, 391.

GANDOLFO, J. H.

Location and design of railroad terminal stations. LXIX, 428.

GIBBS, GEORGE.

"The New York Tunnel Extension of the Pennsylvania Railroad. Station Construction, Road, Track, Yard Equipment, Electric Traction, and Locomotives." LXIX, 226, 434.

GREEN, F. M.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Lining of the Four Permanent Shafts of the East River Division." LXIX, 78.

HARRISON, C. L.

Design of tunnel approaches and rate of progress on East River Tunnels. LXIX, 397.

HARWOOD, GEORGE A.

Location and design of railroad terminal stations, cost of track, etc. LXIX, 423.

HENDERSON, G. R.

Electric locomotives. LXIX, 420.

HEWETT, B. H. M.

"The New York Tunnel Extension of the Pennsylvania Railroad. The North River Tunnels." LXVIII, 152.

HILL, E. R.

Operation of electric railroad trains and locomotives at New York Terminal, Pennsylvania Railroad. LXIX, 432.

JACOBS, CHARLES M.

"The New York Tunnel Extension of the Pennsylvania Railroad. The North River Division." LXVIII, 32.

JAPP, HENRY.

"The New York Tunnel Extension of the Pennsylvania Railroad. Contractors' Plant for East River Tunnels." LXIX, 1, 393.

KATTE, EDWIN B.

Electric railways and locomotives. LXIX, 422.

LAVIS, F.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Bergen Hill Tunnels." LXVIII, 84.

MASON, FRANCIS.

"The New York Tunnel Extension of the Pennsylvania Railroad. The Cross-Town Tunnels." LXVIII, 391.

"The New York Tunnel Extension of the Pennsylvania Railroad. The East River Tunnels." LXVIII, 419.

NOBLE, ALFRED.

"The New York Tunnel Extension of the Pennsylvania Railroad. The East River Division." LXVIII, 62.

O'BRIEN, JOSEPH H.

"The New York Tunnel Extension of the Pennsylvania Railroad. Certain Engineering Structures of the New York Terminal Area." LXIX, p. 152.

RAYMOND, CHARLES W.

"The New York Tunnel Extension of the Pennsylvania Railroad." LXVIII, 1.

STORER, N. W.

Electric locomotives. LXIX, 426.

TEMPLE, E. B.

"The New York Tunnel Extension of the Pennsylvania Railroad. Meadows Division and Harrison Transfer Yard." LXVIII, 75.

WEGMANN, EDWARD.

Method of tunneling on part of New Croton Aqueduct. LXIX, 388.

WILGUS, WILLIAM J.

Location and design of terminal railroad stations and yards. LXIX, 417.

WOODARD, S. H.

"The New York Tunnel Extension of the Pennsylvania Railroad. The East River Tunnels." LXVIII, 419.

